

FAERICHNYY, B. P.; GOL'DFARB, Yakov Lazarevich; SHALAVINA, I. F.

"On the synthesis of the 2,3,4,5-tetrahydrobiotin."

Report presented for the 3rd Intl. Symposium on the Chemistry of
Natural Products (IUPAC), Kyoto, Japan, 12-18 April 1964.

FABRICHTNY, B.P.; KRASNYANSKAYA, E.A.; SHALAVINA, I.F.; GOL'DFARB, Ya.L.

Synthesis of aliphatic amino acids from thiophene derivatives.
Part 7: Preparation of some higher α -amino acids from 2-phenyl-
4-thenyliden-5-oxazolones. Zhur. ob. khim. 33 no.8:2697-2702
Ag '63. (MIRA 16:11)

1. Institut organicheskoy khimii imeni N.D. Zelinskogo AN SSSR.

FABRICHTVY, B.P.; SHALAVINA, I.F.; GOLDFARB, Y.I.

Synthesis of aliphatic amino acids from thiopene derivatives.
Part 8: Influence of certain factors on the product yield in the
reduction desulfurization stage. Zhur. b. khim. 34 no.12:3878-
3887 D '64 (MIRA 18:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo A! SSSR.

FABRICHTNY, B.I.; SHALAVINA, I.F.; GOL'DFARB, Ya.L.

New synthesis of 2,3,4,5-tetrahydrobiotin. Dokl. AN SSSR 162 no.1:
120-123 My '65. (MIRA 12:5)

I. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
Submitted November 4, 1964.

L 3864-65 ENT(m)/EPF(c)/EWP(j)/T Pc-4/Pr-4 RM S/0190/65/007/003/0185/0490
 ACCESSION NR: AP5008374

AUTHORS: Salamatina, O. B.; Bonetskaya, A. K.; Skuratov, S. M.; Fabrichnyy, B. P.; Shalavina, I. F.; Gol'dfarb, Ya. L.

TITLE: Kinetics and thermal effect of polymerization of some C-alkyl substituted lactams

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 7, no. 3, 1965, 485-490

TOPIC TAGS: alkylation, polymerization, kinetics, thermal effect

ABSTRACT: A study was made of the kinetics of polymerization of 5-CH₃-, 7CH₃-, 7C₂H₅- and 7C₃H₇-caprolactams and 8-C₂H₅- and 8C₃H₇-enantholactams in the presence of water alone and with different amounts of phosphoric acid at 240C. The 7-C₃H₇-caprolactam was synthesized. The others were obtained from VNIIV. For polymerization in water it was found that the process is autocatalytic for C-alkyl substituted and unsubstituted lactams alike, that the substitution in a lactam molecule sharply lowers the reaction rate, that the degree of conversion from monomer to polymer at maximum rate also declines markedly for both alkylated caprolactams and alkylated enantholactams, and that the time of reaching maximum

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ACCESSION NR: AP5008374

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reaction rate for these monomers is increased. When phosphoric acid is present with the water the maximal reaction rate is markedly increased, the rate increasing with concentration of acid; the degree of conversion at the maximum rate decreases and does not depend on the acid concentration; and the time for reaching maximum rate is strongly reduced. It was found that the maximal rate depends on the position of the substituted alkyl in the ring, and that this rate decreases with increase in length of the substituted alkyl. Methyl substitution in caprolactams lowers the thermal effect of polymerization. Ethyl substitution increases the effect, and propyl substitution does not change it. Orig. art. has: 3 figures and 3 tables.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University); Institut organicheskoy khimii im. Zelinskogo, AN SSSR
(Institute of Organic Chemistry, AN SSSR)

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Card 2/2 *Lo*

FABRICHTNY, B.P.; SHALAVINA, I.F.; GOL'DFARB, Ya.L.

Synthesis of aliphatic amino acids from thiophene derivatives.
Part 9: Preparation of α -alkyl- ϵ -caprolactams and α -alkyl- ϵ -aminocaproic acids. Zhur. org. khim. 1 no.8:1507-1514
Ag '65. (MIRA 18:11)

1. Institut organicheskoy khimii imeni Zelinskogo AN SSSR.

137-58-5-9319

Translation from Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 75 (USSR)

AUTHORS: Ponomarev, V.D., Stolyarova, Ye.I., Koz'min, Yu.A.,
Favorskaya, L.V., Shalavina, Ye.L.

TITLE: A Leaching Treatment of Dust From Furnaces of Lead Plants
(Shchelochnoy sposob pererabotki pyley svintsovykh zavodov)

PERIODICAL: Izv. AN KazSSR. Ser. gorn. dela, metallurgii, str-va i
stroyaterialov, 1956. Nr 4 (15), pp 3-17

ABSTRACT: The authors present a technology of a dust-processing system intended to increase the extraction of Cd, Tl, and In from roasted dusts issuing from smelting furnaces in lead plants. The system possesses the following advantages: 1) the Tl is extracted in the early stage of dust processing, namely, during aqueous leaching; the extraction of metallic Tl constitutes 52-57%; the electrolytic Tl, obtained by means of a two-stage electrolysis process, is 99.998% pure; 2) large amounts of Pb, Zn, and As are extracted into solution in the process of alkaline leaching. Cd and In remain in the residue. Owing to the considerable reduction in the weight of the leaching residue (down to 1/6-1/11), the amount of Cd and In contained in it is 6-11 times greater than it was in the original dust.

Card 1/1

G.S.
1. Lead ores--Processing 2. Metals--Separation 3. Electrolysis
--Applications

PONOMAREV, V.D.; STOLYAROVA, Ye.I.; KOZ'MIN, Yu.A.; FAVORSKAYA, L.V.;
SHALAVINA, Ye.L.

Alkali method of treating lead refinery flu dusts. Izv.AN Kazakh.
SSR.Ser.gor.dela met., stroi. i stroimat. ...4:1-17 '57. (MIRA 11:4)
(Flueash) (Leaching)

SOV/137-58-7-14581

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 91 (USSR)

AUTHORS: Shalavina, Ye.L., Stolyarova, Ye.I.

TITLE: Cementation of Lead from Alkaline Solutions by Zinc (Tsementatsiya svintsa iz shchelochnykh rastvorov tsinkom)

PERIODICAL: Izv. AN KazSSR. Ser. gorn. dela, metallurgii, str-va i stroymaterialov, 1957, Nr 4 (15), pp 18-29

ABSTRACT: A description is provided of the results of laboratory experiments in the cementation of Pb from alkaline solution by metallic Zn. The precipitation of the Pb occurred along the side surface of a rotating Zn cylinder, out of solution containing 300 g caustic per liter and 1.98 g Pb per liter, at various rates of stirring (rotation of the Zn cylinder) and temperatures. Also checked was the influence of a change in the concentrations of Pb and caustics in the solution. The linear ratio of the reaction to the rate of stirring and the low temperature coefficient of the reaction rate characterize the process of Pb precipitation as a process of diffusion. An increase in the concentration of caustic in the solution sharply reduces the rate of reaction owing to an increase in viscosity. An increase in the concentration

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SOV/137-58-7-14581

Cementation of Lead from Alkaline Solutions by Zinc
of Pb in the solution increases the rate at which it is precipitated.

A.P.

1. Alkaline solutions--Separation 2. Lead--Precipitation 3. Zinc--Applications

Card 2/2

Shalavina, Ye. L.

137-58-5-9322

Translation from: Referativnyy zhurnal. Metallurgiya, 1958, Nr 5. p 76 (USSR)

AUTHORS Shalavina, Ye. L., Stolyarova, Ye. I.

TITLE: How Certain Physicochemical Factors Affect the Electrode Potential of Zinc in the Process of Cementation of Lead From Alkaline Solutions (Vliyaniye nekotorykh fiziko-khimicheskikh faktorov na elektrodnyy potentsial tsinka pri tsementatsii svintsa iz shchelochnykh rastvorov)

PERIODICAL: Izv. AN KazSSR. Ser. gorn. dela, metallurgii, str-va i stroymaterialov, 1957, Nr 4 (15). pp 30-37 (Summary in Kazakh)

ABSTRACT: As a result of studies of electrode potentials in the process of Zn cementation of lead from alkaline solutions, the following facts were established: 1) the presence of Pb in the solution displaces the Zn potential in the direction of positive values; 2) an increase in temperature and concentration of NaOH in the solution produces a negative change in the potential; 3) the rate of progress of the cementation process may be evaluated qualitatively by observing variations in electrode potentials.

G.S.

Card 1/1 1. Zinc electrode--Properties 2. Lead--Separation 3. Sodium hydroxide--Applications

YE L. SHALAVINA

18(5,3) PHASE I BOOK EXPLOITATION SOV/2094
Akademika nauk Kazakhskoy SSR. Institut metallurgii i
obogashcheniya

Study 1.1 (Transactions of the Institute of Metallurgy and
Ore Dressing, Kazakh SSR Academy of Sciences, Vol. 1)
Almaty, 1959. 159 p. 1,225
copies printed.

Ed.: Yu. N. Kuratsov; Tech. Ed.: Z.P. Borokina;
Editorial Board: V.D. Ponomarev (Resp. Ed.), B.N. Lebedev,
A.N. Grigorovich, L.P. M. R.A. Isokova, I.R. Polyanyanov
(Resp. Secretary), and Ye. I. Ponomareva.

PURPOSE: This book is intended for metallurgists and
metallurgical engineers.

COVERAGE: This is a collection of articles dealing with various
aspects of nonferrous metallurgy, principally nonferrous, and
with related matters such as treatment of ore concentrates,
drying of slags, etc. Topics discussed include pre-
cipitation of copper from slags, extraction of arsenic
from slags, recovery of rare metals from smelting dust,
electrolytic precipitation of lead and zinc, and drying of
lead-zinc concentrates. Three articles are concerned with
the metal, phenol. The articles are accompanied by Soviet
and non-Soviet references.

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Isakova, R.A., and Ye. I. Ponomareva. Treatment of
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Slags by the Sulfidation Method 46

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Ponomareva, Ye. I., P.P. Tsyb, Ye. L. Shalavina,
A.G. Batruk, and Yu. N. Moshutin. Extraction of
Nonferrous and Rare Metals from Furnace Dust at the
Chimkent Lead Plant 76

SHALAVINA, YE. L.

SHALAVINA, Ye.L.; PONOMAREVA, Ye.I.

Cementation of arsenic, antimony and copper from alkaline
solutions by zinc. Izv.AN Kazakh.SSR.Ser.met.obog.1 ognuup.
no.1:71-79 '59. (MIRA 13:4)

(Cementation (Metallurgy))
(Nonferrous metals--Metallurgy)

S/137/62/000/003/044/191
A006/A101

18.3.11
AUTHORS: Tseft, A. L., Shalavina, Ye. L., Zhakipova, Z. D.
TITLE: Dissolving and precipitation of rare metal sulfides in salt and acid chloride solutions
SYNOPSIS: Referativnyi zhurnal, Metallurgiya, no. 3, 1962, 22, abstract 30141 (Izv. AN KazSSR, Ser. Metallurgii, obogashcheniya i ogneporov, 1961, no. 2, 91 - 95, Kaz. summary)
TEXT: H_2S was used for precipitation of GeS_2 , SnS_2 , In_2S_3 , Tl_2S , GeS_2 . The dissolving of these precipitates in solutions of $FeCl_3$, $FeCl_2$, HCl , $Fe_2(SO_4)_3$, H_2SO_4 was investigated in solutions of their mixtures at 80°C and during boiling. The first three precipitates dissolve almost completely, GeS_2 to 81.9 - 89.0%. The precipitation of rare metals by H_2S from a solution of the following composition (in g/l) was studied: Pb 3, Zn 11.1, rare metals 0.1; initial pH 1 without heating, temperature 80°C. Ge, Re and Mo sulfides are fully precipitated, Ga, In and Ti are more completely precipitated at higher temperatures; the degree of precipitation depends on the completeness of Pb and Zn precipita-

Card 1/2

SHALAVINA, Ye.L.; ZHAKIPOVA, Z.D.

Dissolving indium and thallium sulfides in aqueous solutions
of heavy metal sulfates. Trudy Inst. met. i obog. AN Kazakh.
SSR 6:47-50 '63. (MIRA 16:10)

SHALAVINA, Ye.L.; GUSAROVA, T.D.; OTTO, E..

Cementation of thallium from alkali solutions. Trudy Inst. met. i
obog. AN Kazakh. SSR 9:106-111 '64. (MIRA 17:9)

SHALAVINA, Ye.L.; GUSAROVA, T.D.

Effect of ultrasonics on the cementation of metals from alkali
solutions. Trudy Inst. met. i obog. AN Kazakh. SSR 9:121-129
'64. (MIRA 17:9)

SHALAVINA, Ye.L.; GUSAROVA, T.D.

Gallium cementation from alkali solutions. Trudy Inst. met. i obog.
AN Kazakh. SSR 12:52-57 '65. (MIRA 18:10)

... .., T.S.L.

... of arsenic, boron, and germanium during the reduction of
... iron by metallic iron in the presence of copper ions.

Triz. met. labog. AN Kazakh. SSR 12:87-90 '65.

(MIRA 18:10)

... .. I.: WILHELM RATA, Ye., SAUBENOVA, I.G.

... .. of arsenic, in Mn, and germanium from sulfuric
acid solutions of sulfur dioxide. Izv. Inst. met. i obog. AN
USSR 18:92-94 1955. (MIRA 18:10)

IL'IN, A.A.; SHALAVINA, Z.F.

Care of the health of women and children in Kirghizistan.
Sov. zdrav. Kir. no.4/5:33-37 JL-O'63 (MIRA 17:1)

SIMAY, I.

Construction Industry

"Public control of residential building construction." V. pom. profektiva, 13,
No. 10, 1961.

Monthly List of Russian Accessions, Library of Congress, August 1952., Unclassified.

SHALAY, G.

Sila obshchestvennogo kontrolya. Iz opyta zhilishchno-bytovoï komis. zavkoma /The strenght of communal control; experience of the housing commission of the factory committee/. Moskva, Profizdat, 1953. 87 p.

SC: Monthly List of Russian Accessions, Vol. 7, No. 3, June 1954.

SHALAY, K.M., podpolkovnik meditsinskoy sluzhby; GUMENYUK, A.S., podpolkovnik
meditsinskoy sluzhby; SPKHTOR, M.N., podpolkovnik meditsinskoy sluzhby

Remarks on Professor D.E.Rozenblium's article on the "Main problems
in the field of acceleration physiology." Voen.-med. zhur. no.5:
91 My '56. (MLRA 9:9)

(AVIATION MEDICINE)

SHALAYEV A.A.

ABRIKOSOV, A.I.; SHALAYEV, A.A.

[Foremost works in medical sciences] Luchshie nauchnye raboty v
oblasti meditsiny. Arkh.pat., Moskva 12 no.1:5-1: Ja-7 '50. (CML 19:1)

SHALAYEV, A.F.

USSR/Soil Science - Cultivation, Amelioration, Erosion.

J-4

Abs Jour : Ref Zhur - Biol., No 2, 1958, 5815

Author : Shalayev, A.F.

Inst : Academy of Sciences TurkmenSSR

Title : Amelioration of the Saline Soils of the Amu-Dar'ya Delta

Orig Pub : Tr. 3-y ob'yedin. sessii Akad. Nauk TurkmenSSR po vopr. str-
va Karakumsk. kanaia i dal'neysh. razvitiya khlopkovodstva
v Turkmenistane, 1955, Ashkhabad, 1956, 263-275

Abstract : This is a review of the possibility of applying in the
Delta the ameliorative measures proposed by various au-
thors (Fedorov, B.V., 1952; Pankratov, P.A., 1953; Reshet-
kina, N.M., 1954; Shikin, S.S., 1954; Shuvalov, S.A.,
1953; Kovda, V.A., and others, 1954; Shalayev, A.F. and
others, 1953).

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SOV/137-58-7-15592

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 7, p 239 (USSR)

AUTHORS: Dekhtyar, I. Ya. , Shalayev, A. M.

TITLE: Influence of Defects of Crystalline Structure on the Decomposition and the Ordering of Solid Solutions of Cobalt and Iron (Vliyaniye defektov kristallicheskogo stroyeniya na raspad i uporyadocheniye tverdykh rastvorov kobal'ta i zheleza)

PERIODICAL: Sb. nauchn. rabot In-ta metallofiz. AN Ukr SSR, 1957, Nr 8, pp 91-100

ABSTRACT: The effect of supersaturation of the lattice with vacancies produced by high temperature tempering on the rate of decomposition or the ordering during annealing was investigated. For this purpose, the longitudinal magnetoresistance (in a field - 2000 oersted) was measured for the alloys Co with 10 atom % Al and Fe with 30 atom % Al, quenched at 1100, 1200, and 1300°C, in the process of annealing at different temperatures. The slope of the primary sections of curves of the relationship of $\Delta R/R$ to time of annealing (R is the resistivity) was taken as a criterion of the speed of the reaction. For the rate of decomposition V of the solid solution in the initial stage the

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SOV/137-58-7-15592

Influence of Defects of Crystalline Structure (cont.)

expression $V(t) = B(Dt)^{3/2}$ was adopted, where D is the coefficient of diffusion and t is the time. From the relationship $D = cD_b$, where c is the concentration of vacancies, aD_b is their coefficient of diffusion, the following expression was obtained for the energies of activation of the formation of vacancies E_o and the motion of the vacancies E_s :

$$E_s : E_o = 2/3 R [d \log V / d(1/T_{\text{quench}})]_{T_{\text{anneal}} = \text{const.}}, \text{ and}$$

$$E_s = 2/3 R [d \log V / d(1/T_{\text{anneal}})]_{T_{\text{quench}} = \text{const.}}$$

For the rate of the ordering process the following relationship was adopted: $V_{\text{ord}} = V_o \exp(-a)RT$, where V_o does not depend on T . From this, the following expressions were deduced for E_o and E_s :

$$E_o = R [d(\log V_{\text{ord}}) / d(1/T_{\text{quench}})]_{T_{\text{anneal}} = \text{const.}}$$

$$E_s = R [d(\log V_{\text{ord}}) / d(1/T_{\text{anneal}})]_{T_{\text{quench}} = \text{const.}}$$

For the alloy Co + 10 atom % Al the equations:

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Influence of Defects of Crystalline Structure (cont.)

$E_0 = 20.2$ kcal/g-atom ($T_{\text{anneal}} = 400^\circ\text{C}$) and $E_s = 21$ kcal/g-atom ($T_{\text{quench}} = 1100^\circ$); for the alloy Fe+30 atom%Al, $E_0 = 14.7$ kcal/g-atom ($T_{\text{anneal}} = 350^\circ$) and $E_3 = 19.1$ kcal/g-atom ($T_{\text{quench}} = 1100^\circ$). The assumption is made that in the alloy of Co with Al, quenching aids the grouping of cavities in pairs (due to the low E_s in this case); it is possible that a quickening effect on the diffusion is exerted by the stresses developed in the process of decomposition. The conclusion is made that the defects of crystalline structure have a considerable effect on the speed of phase transformations.

D. B.

1. Metals--Crystal structure 2. Metals--Transformations 3. Metals
--Electron transitions

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18(4.7): 25(1) SOV/2306

PHASE I BOOK EXPLOITATION

Nauchnaya nauka Ukrainskoy SSR. Institut metallofiziki

Voprosy fiziki metalliv i metallovedeniya (Problems in the Physics of Metals and Metallurgy) Kiev, Izd-vo AN Ukrainskiy SSR, 1959. (Series: Iti: Sbornik nauchnykh rabot, Nr 9) Errata slip inserted. 3,000 copies printed.

Ed. of Publishing House: V.L. Shkurko; Tech. Ed.: M.I. Yefimova; Editorial Board: V.M. Svechnikov, Academician, Academy of Sciences, Ukrainian SSR (Resp. Ed.); S.D. Gertariken, Doctor of Physical and Mathematical Sciences; and I.Ya. Dekhtyar, Doctor of Technical Sciences.

PURPOSE: This collection of articles is intended for scientific workers, aspirants, and engineers in the fields of the physics of metals, metallurgy, and metallography. It may also be useful to students of advanced courses in metallurgical and physical faculties.

COVERAGE: This collection of articles deals with the following topics: effect of high-speed heating, heat treatment, deformations, and crystallization conditions on phase transformations, structures, and properties of metals and alloys; the effect of additional alloying components on volumetric and intercrystalline diffusion in alloys; and the effect of repeated quench hardening and radioactive and ultrasonic treatment on the physical properties of alloys. No personalities are mentioned. References follow several of the articles.

Dekhtyar, I.Ya., S.D. Gertariken, A.M. Shalayev, and M.P. Plotnikova. Effect of Irradiation on Some Physical Properties of the Ni₃Mn Alloy
The article discusses the influence of γ irradiation on longitudinal galvanometric effects, on the lattice parameter of the Ni₃Mn Alloy (electrolytic Ni and 23 percent electrolytic Mn); and on the process of thermal ordering. 173

Polotskiy, I.O., and T.Ya. Beniyeva. Effect of Alloying and Heat Treatment on the Elastic Properties of Nickel Alloys
The results of experimental investigation of the dependence of the modulus of elasticity on the composition and temperature of Ni-Cr and Ni-Ti alloys are presented. The effect of heat treatment on elastic properties of these alloys is discussed. 178

Ovalyenko, D.Ya., and Yul. Sosnina. Influence of Crystallization Conditions on the Mosaic Structure of Aluminum Crystals
The article reviews work done previously on investigations of the mosaic structure of cast aluminum (99.996 percent Al) crystals. The investigation takes into consideration the conditions of grain growth and eventual admixtures. 185

Lashko, A.S., and D.M. Durlikov. Calculation of the Function of Distribution of Atoms in a Fluid
The complete sequence of the trigonometric method for calculating the function of distribution of atoms is presented. The intensity curve of dispersed X-rays of liquid mercury is used as an example. 198

AVAILABLE: Library of Congress

Card 12/2

GO/AR
10-12-59

S/170/60/003/02/15/026
B008/B005

AUTHORS: Dekhtyar, I. Ya., Shalayev, A. M. ¹⁹
TITLE: The Nature of Imperfections Occurring During the Irradiation
of an Fe₃Al Alloy by γ -Rays
PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 2,
pp. 78-82

TEXT: The authors studied the influence of γ -rays on the galvanomagnetic effect $\left(\frac{AR}{R}\right)_{II}$ and the coercive force H_c of the Fe_3Al alloy depending on the radiation dose. The samples cooled suddenly in oil from 900° were irradiated at room temperature, 140, and $240^\circ C$. For control, the variation of the properties investigated was also measured under the action of temperature without irradiation. It was shown that γ -rays increase the H_c at room temperature (Fig. 1). At 140 and 240° , the change of H_c is accelerated by γ -rays. It attains higher values than under the action of temperature alone

Card 1/3

The Nature of Imperfections Occurring During the
Irradiation of an Fe₃Al Alloy by γ -Rays

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B008/B005

(Fig. 2). The galvanomagnetic effect is not influenced by γ -rays at room temperature. At 240°, its change proceeds more quickly, and attains higher values than in heating without irradiation (Fig. 3). The change of H_c and

$\frac{\Delta R}{R}$ under the action of γ -rays proceeds in the same direction as in

II thermal regulating of the alloy. A saturation can be observed in both cases. On the basis of the investigations of Fe₃Al and Ni, as well as of Ni₃Mn

(Ref. 4), it is assumed that Frankel's pair defects and dislocation loops originate due to the γ -rays. The variation in physical properties of the metallic substances investigated is also connected with the formation of

these defects. The change of $\left(\frac{\Delta R}{R}\right)_{II}$ is effected by the formation of

Frankel's pair defects, and its subsequent relaxation and the change of H_c are effected by the formation of dislocation loops. A table shows maximum energy values for various atoms. There are 3 figures, 1 table, and 13 references, 7 of which are Soviet.

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The Nature of Imperfections Occurring During the
Irradiation of an Fe₃Al Alloy by γ -Rays

S/170/60/003/02/15/026
B008/B005

ASSOCIATION: Institut metallofiziki AN USSR, g. Kiyev (Institute of Metal
Physics AS Ukrainskaya SSR, City of Kiyev)

✓

Card 3/3

DEKHTYAR, I.Ya.; SHALAYEV, A.M. [Shalaiev, A.M.]

Effect of gamma radiation on certain magnetic properties of iron and its alloys. Ukr. fiz. zhur. 5 no. 5:677-682 S-0 '60.

(MIRA 14:4)

1. Institut fiziki metallov AN USSR.
(Iron—Magnetic properties) (Gamma rays)

S/048/62/026/002/020/032
B106/B104

AUTHORS: Dekhtyar, I. Ya., and Shalayev, A. M.
TITLE: Effect of lattice defects on the displacement velocity of
the domain boundaries
PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya. v. 26
no. 2, 1962, 273-276

TEXT: The effect of lattice defects on the rate of magnetization of pure nickel (99.99 % Ni), of an Ni-Cu alloy (30 % Cu), and of an Fe-Si alloy (4 % Si) was studied. The specimens were 50 mm long and 3 mm thick polycrystalline cylinders. As the specimens were no single crystals with simple domain structure, the authors did not obtain the velocity of displacement of the domain boundaries but only the rate of magnetization of the specimens which is proportional to the velocity of displacement. Two coils were wound around each specimen, one for magnetization of the specimen and the other for measurement of the induction appearing when the field is applied to the specimen. The curves of the currents induced in the coil were recorded on a film by a loop oscillograph. All specimens

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B106/B104

Effect of lattice defects on...

were examined after tempering or after plastic deformation by twisting or after radioactive irradiation. The latter was done in two ways: either by gammas from a Co^{60} preparation or in a reactor with filtration of the thermal neutrons by a cadmium filter. The thermal neutrons cause a flux of gamma quanta which act upon the specimen in addition to the fast neutrons. Plastic deformation causes dislocations in the material. Irradiation with gamma quanta causes paired Frenkel' defects and complex dislocations. Also the fast neutrons cause dislocations. Therefore, in the described treatment of the specimens imperfections will arise which are a resistance to the migration of the domain boundaries. Fig. 1 shows the dependence of magnetization rate of Ni-Cu specimens on the applied field (for the different pretreatments). The magnetization rate was found to decrease with increasing degree of plastic deformation. Similar conditions were also found in specimens of Ni and Fe-Si alloy. Fig. 3 shows the effect of the irradiation dose on the magnetization rate of Ni and Fe-Si alloy. The decrease in magnetization rate can be explained by the slowing down of domain boundary migration by the defects arising on plastic deformation or radioactive irradiation. Recovery can be explained either by radiation annealing of the defects with increasing radiation dose, or by a qualitative

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Effect of lattice defects on...

S/048/62/026/002/020/032
B106/B104

redistribution of the imperfections in the material with increasing radiation dose. There are 3 figures and 7 references: 1 Soviet and 6 non-Soviet. The three most recent references to English-language publications read as follows: DeBlois R. W., J. Appl. Phys., 29, 459 (1958); Galt J. K., Phys. Rev., 85, 4 (1952); Rudbell D. S., Bean C. F., J. Appl. Phys., 26, 11, 1318 (1955).

Fig. 1. Magnetization rate of Ni-Cu versus field strength.

Legend: (1) deformation 0.15; (2) deformation 0.375 (deformations in nd/l units; n - number of turns on twisting, l - length, d - diameter of specimen); (3) annealed specimens; (4) Co^{60} -gamma irradiated specimens (10^6 r); (5) specimens irradiated in a reactor ($5 \cdot 10^7$ r); (6) idem, $1.5 \cdot 10^8$ r); (7) idem, $2.5 \cdot 10^8$ r); ordinates - V , m/sec.

Fig. 3. Magnetization rate versus radiation dose for specimens of nickel (1 - 3) and Fe-Si (4 - 7).

Legend: (1), (4) $H = 40$ oe; (2), (6) $H = 24$ oe; (3), (7) $H = 20$ oe; (5) $H = 30$ oe. Ordinates - V , m/sec; abscissae - radiation dose, r.

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SHALAYEV, A. M.

90

PHASE I BOOK EXPLOITATION

SOV/6176

Konobeyevskiy, S. T., Corresponding Member, Academy of Sciences
USSR, Resp. Ed.

Deystviye yadernykh izlucheniiv na materialy (The Effect of
Nuclear Radiation on Materials). Moscow, Izd-vo AN SSSR,
1962. 383 p. Errata slip inserted. 4000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhniki
cheskikh nauk; Otdeleniye fiziko-matematicheskikh nauk.

Resp. Ed.: S. T. Konobeyevskiy; Deputy Resp. Ed.: S. A.
Adasinskiy; Editorial Board: P. L. Gruzin, G. V. Kurdyumov,
B. M. Levitskiy, V. S. Lyashenko (Deceased), Yu. A. Martynyuk,
Yu. I. Pokrovskiy, and N. F. Pravdyuk; Ed. of Publishing
House: M. G. Makarenko; Tech. Eds: T. V. Polyakova and
I. N. Dorokhina.

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SOV/6176

The Effect of Nuclear Radiation (Cont.)

PURPOSE: This book is intended for personnel concerned with nuclear materials.

COVERAGE: This is a collection of papers presented at the Moscow Conference on the Effect of Nuclear Radiation on Materials, held December 6-10, 1960. The material reflects certain trends in the work being conducted in the Soviet scientific research organization. Some of the papers are devoted to the experimental study of the effect of neutron irradiation on reactor materials (steel, ferrous alloys, molybdenum, avial, graphite, and nichromes). Others deal with the theory of neutron irradiation effects (physico-chemical transformations, relaxation of internal stresses, internal friction) and changes in the structure and properties of various crystals. Special attention is given to the effect of intense γ -radiation on the electrical, magnetic, and optical properties of metals, dielectrics, and semiconductors.

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The Effect of Nuclear Radiation (Cont.)

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Andronikashvili, E. L., N. G. Politov, and M. Sh. Getiya.
Effect of Irradiation in a Reactor on Structure and Hardness
of Alkali-Halide Crystals

277

The irradiation was conducted in the IRT-2000 Reactor at
the Physics Institute of the Georgian Academy of Sciences.

Orlov, A. N. Use of Electronic Computers for Calculating
Radiation Disturbances in Metals

288

Dekhtyar, I. Ya., and A. M. Shalayev. Change in Physical
Properties of Ferromagnetic Metals and Alloys Caused by
γ-Radiation

294

Davtsariken, S. D. (Deceased), and N. P. Plotnikova. Effect
of γ-Irradiation on Processes of Ordering and Disordering in
Fe-Al Alloys

306

Konozenko, I. D., V. I. Ust'yanov, and A. P. Galushka.
γ-Conductivity of Cadmium Selenide

308

Card 11/14

S/601/62/000/016/006/029
E193/E383

AUTHORS: Dekhtyar, I.Ya. and Shalayev, A.M.

TITLE: The effect of γ -radiation on some properties of deformed metals

SOURCE: Akademiya nauk Ukrayins'koyi RSR. Instytut metalofyzyky. Sbornik nauchnykh rabot. no. 16. Kiyev, 1962. Voprosy fiziki metallov i metallovedeniya. 48 - 54

TEXT: The effect of γ -radiation on the microstresses and concentration gradients in Fe-Cr (8, 10, 12% Cr), Fe-25 at.% Al and steel Y8 (U8) specimens was studied. The test pieces, in the form of strip 30 - 35 mm long and 0.3 mm thick, were homogenized and then bent over a 60 mm radius in a suitably-shaped vice. The bending operation was carried out at 720 °C on Fe-Cr alloys, at 620 and 1200 °C on the Fe-Al alloy and at 850 °C on steel U8; after bending the specimens were held at the temperature for 1 - 1.5 min and then water-quenched. The radius r_0 of the specimen was determined, after removal from the vice, from the depth of the arc curvature. The specimens, either free or clamped

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The effect of

S/601/62/000/016/006/029
E193/E583

in a flat vice, were then bombarded with γ -radiation and the resultant changes $\Delta\sigma$ in the internal microstresses were calculated from the formula:

$$\Delta\sigma = EZ \left(\frac{r_1 - r_0}{r_1 r_0} \right)$$

where E is the Young modulus, Z the half-thickness of the specimen and r_1 its radius after the irradiation treatment. For comparison, $\Delta\sigma$ was also determined in specimens held in a flat vice but not irradiated. Typical results are reproduced in Fig. 1, where $\Delta\sigma$ (kg/mm²) is plotted against the γ -radiation dose (γ /cm²), the various curves relating to the following Fe-Al alloy specimens: 1 - bent at 620 °C and irradiated in a flat vice; 2 - bent at 620 °C and aged in a flat vice without irradiation; 3 - bent at 620 °C and irradiated without clamping; 4 - bent at 1200 °C and irradiated in a flat vice. The following explanation was postulated of the γ -radiation-induced relaxation of internal microstresses observed in the course of the present investigation.

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S/601/62/000/016/006/029
E193/E383

The effect of

Fraenckel pairs or more complex (dislocation-type) defects are formed in the metal as a result of γ -radiation. These defects have increased mobility at the moment of their formation and migrate to the microstress regions, annihilating defects formed during the preliminary deformation and, consequently, leading to relaxation of internal stresses. In general, it can be stated that γ -radiation reacts with metals and induces in them processes that lead to the formation of a structure more approaching the state of equilibrium. Similar results were obtained during studies of the effect of γ -radiation on the coercive force of nickel wires preliminarily deformed in torsion; the higher the degree of preliminary deformation, the greater was the γ -radiation-induced decrease in the coercive force of the test pieces. An additional, more direct proof of the γ -radiation-induced increase in the mobility of atoms was obtained in the following manner. Specimens of a 27% Mn-Ni alloy were vacuum-annealed at 1 000 C for 1 h. A concentration gradient was formed in the surface layer as a result of volatilization of Mn. Measurements of the width of the (311) and (200) diffractions at half-height of the maximum, before and

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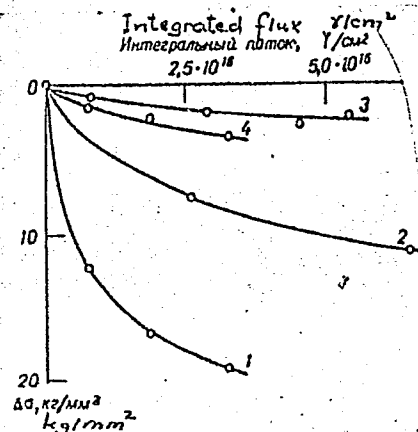
The effect of

S/601/62/000/016/006/029
E193/E383

after γ -irradiation, showed that this treatment brought about a considerable decrease in the Mn-concentration gradient. There are 5 figures.

SUBMITTED: December 30, 1961

Fig. 1:



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S/810/62/000/000/009/013

AUTHORS: Dekhtyar, I. Ya., Shalayev, A. M.

TITLE: Effect of γ -radiation on the relaxation of internal stresses in iron-based alloys.

SOURCE: Metallovedeniye i termicheskaya obrabotka; materialy konferentsii po metallovedeniyu i termicheskoy obrabotke, sost. v g. Odesse v 1960 g. Moscow, Metallurgizdat, 1962, 240-245.

TEXT: The paper reports the results of an experimental investigation which extends concepts developed in antecedent literature, including Thompson, D., Homes, D., J. Phys. Chem. Solids, v.1, no.4, 1957, 275-278, regarding changes in physical properties of metals under γ -radiation, for example, increase in Young modulus (ME) and the coercive force. The present investigation studied the relaxation (R) of internal stresses (IS) in plastically deformed specimens under γ -quantum radiation. Specimens of Fe-Al (25% at Al), Fe-Cr (8, 10, and 12% Cr), and steel 8 (U8) were tested. Equilibrium structure in Fe-Cr specimens was attained by a 50-hr anneal at 1,170°C. Strip 30-35 mm long, 0.3 mm thick, was bent to a 60-mm radius at high temperature. The Fe-Cr specimens were thus bent at 720°, those of Fe-Al at 620 and 1,200°, and those of steel U8 at 850°, and were

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S/810/62/000/000/009/013

Effect of γ -radiation on the relaxation of ...

then cooled in water. The holding times were reduced to a minimum to avoid any noticeable recrystallization. Upon bending and subsequent quench (Q) a certain stressed state remains fixed. The stress relaxation was observed with reference to the change in bending deflection and was measured with a comparator accurate to 10μ . A Co^{60} source with an activity of 140 curie provided the radiation. Flux through the specimen: $1.5 \cdot 10^{11} \gamma/\text{cm}^2 \cdot \text{sec}$. The results are tabulated. It was assumed, for the purposes of the present investigation, that the ME does not vary under γ -radiation (contrary to existing evidence). Fe-Al alloy specimens bent at 620° with subsequent water cooling were clamped in a flat vise, and some of the specimens were exposed to γ -radiation at 20°C . Both specimen batches underwent relaxation, but the tests showed that the γ -irradiated specimens experienced a greater degree of IS relaxation and the rate of IS relaxation was greater (graph). It is hypothesized that the defects produced by the γ -radiation have sufficient mobility to migrate to points at which stresses exist and to annihilate with defects arising during the plastic deformation and Q. Such a mechanism would explain the IS relaxation accomplished by the γ -radiation. Assuming that for the materials tested, the effective scattering cross-section for γ -quanta is approximately equal to $0.5 \cdot 10^{-24} \text{ cm}^2$ and the maximum γ -quanta flux equals $5.4 \cdot 10^{16} \gamma/\text{cm}^2$, then the number of displacements per unit volume will approximate $2.3 \cdot 10^{15} \text{ cm}^{-3}$.

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Effect of γ -radiation on the relaxation of ...

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This number of displacements formed corresponds to a specified % of change IS. Thus, it is concluded that radiation interacting with a metal will initiate in it stress-relaxation processes and that, since the number of defects formed increases steeply with the energy of the γ -quanta, the effect of γ -radiation in IS relaxation will also increase in intensity. There are 3 figures, 1 table, and 4 references (3 Russian-language Soviet and the 1 English-language US reference cited in the text).

ASSOCIATION: Institut metallofiziki AN USSR (Institute of Metals Physics, AS UkrSSR).

Card 3/3

ACCESSION NR: AT4042830

S/2601/64/000/018/0026/0031

AUTHOR: Dekhtyar, I. Ya (Doctor of technical sciences); Shalayev, A. M.

TITLE: Increase of atomic mobility in alloys as a result of gamma irradiation

SOURCE: AN UkrSSR. Institut metallofiziki. Sbornik nauchny*kh rabot, no. 18, 1964. Voprosy* fiziki metallov i metallovedeniya (Problems in the physics of metals and physical metallurgy), 26-31

TOPIC TAGS: atomic mobility, nickel manganese alloy, alloy electrical resistance, manganese concentration gradient, gamma irradiation, radiation dosage effect, alloy conductivity, Gamma ray

ABSTRACT: Samples (100 x 1 x 0.035 mm) of a Ni alloy containing Mn (10 at. %) were annealed 1 hr. at 1000C (to produce a Mn concentration gradient on the sample surface by high temperature vacuum evaporation) and irradiated (Co^{60} source, $5.9 \cdot 10^{13} \text{ sec}^{-1}$) in doses of $1.08 \cdot 10^4$ or $2.44 \cdot 10^4$ curie/kg at a rate of $3.23 \cdot 10^{-2}$ curie/kg·sec. Electrical resistance was measured (temperature constant to $\pm 0.02\text{C}$, measurement error $\pm 0.05\%$)

Card

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L 8574 66 EWT(1)/EWT(m)/EPF(n)-2/T/EWP(z)/EWA(h)/EWA(c)/EWP(b)/EWA(d)/EWP(w)/EWP(t)
 ACC NR: AT5023810 IJP(c) GG/HW/JD SOURCE CODE: UR/0000/62/000/000/0294/0305

AUTHOR: Dekhtyar, I. Ya.; Shalayev, A. M.

ORG: none

TITLE: Change in the physical properties of ferromagnetic metals and alloys due to gamma ray irradiation

SOURCE: Soveshchaniye po probleme Deystviye yadernykh izlucheniya na materialy. Moscow, 1960. Deystviye yadernykh izlucheniya na materialy (The effect of nuclear radiation on materials); doklady soveshchaniya. Moscow, Izd-vo AN SSSR, 1962, 294-305

TOPIC TAGS: alloy, ferromagnetic alloy, alloy property, ferromagnetic property, property change, irradiation induced change, alloy irradiation, neutron irradiation

ABSTRACT: The effect of gamma irradiation on the galvanomagnetic effect and coercive force (H_c) of iron, nickel, and $Ni_3Mn_{1-x}Fe_xAl$, and Ni_3Fe alloys annealed and quenched from various temperatures has been investigated. The irradiation-induced changes in their magnetic properties generally proceeded in the same direction as those produced by conventional heat treatment (thermal ordering). Gamma irradiation induced the ordering of metals in the disordered condition, promoted further ordering of the metals incompletely ordered by heat treatment, but had a disordering effect on the metals completely ordered by heat treatment. Irradiation at 140 and 240C accelerated the change in the galvanomagnetic effect and

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L 8574-66

ACC NR: AT5023810

H_c , and this change was greater than that produced by heat treatment. The interaction of gamma radiation with a metallic substance led to the formation of Frenkel pairs and other more complex defects (most probably dislocation loops). In irradiation of nickel annealed and quenched from 900, 1000, or 1040C, the course of the changes in H_c was similar to that in low-temperature tempering of a high-temperature quenched ferromagnetic. At the same time, the relative change in H_c was not equivalent to that produced with low-temperature tempering, probably because of a difference in the number of dislocation loops caused by annealing and quenching. Theoretical analysis showed that as the time of exposure to irradiation increases, H_c should increase and approach saturation, and the magnitude of the flux. In general, gamma ray irradiation of a high-temperature annealed and quenched ferromagnetic leads to changes in H_c due to paired defects formed during heat treatment and to the gamma-ray-induced effect, which is similar to low-temperature tempering. Gamma irradiation slowed down the movement of domain boundaries in ferromagnetic materials, probably because of the deceleration of a moving boundary layer by the defects originated by gamma irradiation. Gamma irradiation also substantially increased the relaxation of the internal stresses in plastically deformed ferromagnetic alloys, and in this respect, the effect of gamma irradiation was similar to the effect of neutron irradiation. [MS]

SUB CODE: 11,18/ SUBM DATE: 18Aug62/ ORIG REF: 004/ OTH REF: 005

jw
Card 2/2

SLYUSAR, B.F.; SHALAYEV, A.M.

Heat effect in gray cast iron during annealing following irradiation
by gamma rays. Fiz. met. i metalloved. 19 no.4:636-637 Ap '65.
(MIRA 18:5)

1. Institut metallofiziki AN UkrSSR.

SHALAYEV, A.S.

New receiving and transmitting apparatus. Vest. svyazi 24 no.7:
3-5 J1 '64. (MIRA 17:9)

1. Nachal'nik otdela radioveshchaniya Glavnogo radioupravleniya
Ministerstva svyazi SSSR.

22(1)

SOV/47-59-3-10/53

AUTHORS: Averichev Yu.P., Bondarev D.D., Grinberg Yu.L.,
Shalayev F.K.

TITLE: Relating Courses in Physics to Industrial Practice

PERIODICAL: Fizika v shkole, 1959, Nr 3, pp 27-31 (USSR)

ABSTRACT: This is a survey of practical training in physics received by pupils of school 144 in Moscow. Practical training begins in the 6th class. The pupils visit the plant, where later on (9th class) they will do practical work, and the teachers illustrate the subject of the lessons with examples taken from plant practice. The work to be performed at the plant in the 9th class extends over approximately 200 hours. In the course of a training year, the participants work at the plant once a week for 4 hours, and after the termination of the school year there follows a continuous practice of 12 days. During his training, each participant works at two places, where he is

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SOV/47-59-3-10/53

Relating Courses in Physics to Industrial Practice

assigned special tasks. For two years the industrial training of the 144th school was carried out at the Zavod radiotekhnicheskikh priborov (Radiotechnical Device Plant). At present 1958/59 it is performed at the Moscow plant "Izolyator", which produces lead-ins, condensers and other items for the electrotechnical industry. At this plant the trainees have to get acquainted with the full production cycle and the organisation of the plant (electric shop, electric welding department, transport section, mechanical repair shop, galvanic shop). The main principles ruling this training, as set forth by the authors, are the following: 1) impart to the trainees some habits and skills in practical work and get them accustomed to working under industrial conditions; 2) give the trainees an idea of the general foundations of socialist industrial production; 3) show the application of scientific knowledge

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SCV/47-59-3-10/53

Relating Courses in Physics to Industrial Practice

(physics, chemistry, etc) in production; enlarge, deepen and consolidate this knowledge; 4) get the trainee acquainted with the different kinds of labor and help him in the selection of a profession; 5) favor the development of a Communist attitude toward work. The authors give a survey of the training at the plant and at the school and list some tasks given to the pupils.

ASSOCIATION: 144-ya shkola, Moskva (School Nr 144, City of Moscow)

Card 3/3

SHAL'YEV, I.I. (USSR)

"Contents of Some Trace Elements in Soils and Plant Products
of Northern Kirghiz in Connection with Etiology of Endemic
Goitre."

Report presented at the 5th Int'l. Biochemistry Congress,
Moscow, 10-16 Aug. 1961.

SHALAYEV, F.T.

Amount of chromium, manganese, cobalt, and strontium in the
soils of the Chu, Talas, and Issyk-Kul' Valleys in relation to
the etiology of goiter endemia. Izv. AN Kir. SSR. Ser. biol.
nauk 2 no.6:85-93 '60. (MIRA 14:6)
(KIRGHIZISTAN—MINERALS IN THE SOIL) (GOITER)

SHALAYEV, F.T.

Manganese, chromium, and strontium content in the soils
and vegetable products of some regions of northern
Kirghizia and their role in the occurrence of endemic
goiter. Izv. AN Kir. SSR. Ser. biol. nauk 5 no.3:19-25
'63. (MIRA 17:1)

KOVAL'CHUK, N.R.; SHELESHKO, T.V.; SHALAYEV, G.I.; SHVETS, A.P.

Flooding the Borislav sandstones. Trudy VNIGNI no.12:399-412 '58.
(MIRA 12:3)

(Borislav region--Petroleum engineering)

CHAIKIN, P. I. .

Fuel pumps

Practices in the repairing of fuel pumps for diesel tractors. MTS 12 No. 9, 1962.

Monthly List of Russian Accessions, Library of Congress, December 1962, UNCLASSIFIED

SHILIN, I. I.

Traction - repairing

Repair of parts by means of heating the inside surface. ISS 13, No. 2, 1953.

Monthly list of Russian Acquisitions, Library of Congress
June 1953. U.S.L.

SHALAYEV, I.

Improved device for testing the air tightness of cylinder blocks.
Avt.transp.33 no.8:35 Ag'55. (MLRA 8:12)
(Automobiles--Engines)

BEREZNYUK, G.S.; BULATOV, V.V.; ROGOV, L.V.; SHALAYEV, I.L.

Determination of the coefficient of retention of half-life daughter
derivatives of radon in the respiratory organs of man. Med.rad.

5 no.6:30-34 '60.

(MIRA 13:12)

(RADON)

(RESPIRATORY SYSTEM)

SHALAYEV, I.L.

Maximum permissible concentration of short-living daughters of
radon fission. Med.rad. 5 no.10:56-61 '60. (MIRA 14:2)
(RADON) (AIR-POLLUTION)

L-5072-66 EWT(m) DM
ACC NR: AP5022634

UR/0089/65/019/002/0161/0168
621.039.58:622.349.5

AUTHOR: Bykhovskiy, A. V.; Chesnokov, N. I.; Shalayev, I. I.

TITLE: Radiation safe-guarding of personnel engaged in uranium
ore mining

SOURCE: Atomnaya energiya, v. 19, no. 2, 1965, 161-168

TOPIC TAGS: nuclear safety, radiation dosimetry

ABSTRACT: The protection of mining workers against the effects of ionizing radiation and the causes of injury are reviewed and evaluated. The experiences and dosimetric investigations showed that the greatest damage had been caused by the actions of the air-borne radon and its short-living daughter products. The remedial measures for air-borne contaminations subdivided into three groups are briefly summarized. The first group includes the general requirements for reducing the radioactive dust discharged from drilling and excavation operations. The second group of measures covers the general and local ventilation of uranium mines ensuring the removal of radon and other contaminants. In the third group, the special measures preventing the formation of

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090/0438

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ACC NR: AP5022634

dust and the transfer of radon through the air and water are enumerated. Then, the authors reviewed the investigations which had been conducted in the uranium mines in regard to the sources of radon radiations. The main continuous radon emanation comes from the open ore surfaces with some additional amount coming from rock fissures through air suction and interstitial water. The calculation of radon emanation is based on two factors S' and E . The emanation surface factor S' is expressed as a product of the open rock surface area by the percentage of radium content. Its unit is defined as one square meter by one percent of uranium. The letter E denotes an experimental factor expressed in curie/sec. sq m.%. Its maximum value varies from 10^{-8} for sedimentary rock to 10^{-9} units for hydrothermal rock. The amount of ventilation air Q (cu m) needed for the removal of a radon emanation quantity D (curie/sec) is expressed by the formula $Q=10^7 \times D$. The problems of ventilation of local areas were considered, and the installation of filters and the protection of walls were recommended. As examples, two graphs are presented showing the concentrations of radon in the mines equipped with either a normal or a radon preventing ventilation system. The efficiency of dust prevention measures is also illustrated showing

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ACC NR: AP5022634

a dust rate of 1-1.5 mg/cu m which is lower than the prescribed rate of 2 mg/cu m. The protection of respiratory organs by means of protective masks and respirators of various types is briefly reviewed. The protection against gamma radiation of uranium and thorium ores is summarized. A formula for the calculation of the upper limit of gamma radiation rate P_y is given as $P_y = 16.4 C_u + 8.9 C_{th} + 0.035 C_k$ mrad/hr where C_u , C_{th} and C_k are the percent contents of uranium, thorium and potassium in mine rocks. The dosimetric control and monitoring methods are discussed. They are subdivided into three groups of which the first determines the total concentration of short-living daughter emanation products, the second covers separate RaA , RaB , and RaC concentrations while the third one deals with the evaluation of "latent" energy released as a result of decay of daughter products. A general review of dosimeters, detectors and other equipment is presented in general form on the basis of numerous preceding publications. The accuracy of measurement of gamma dose rates from a thick rock layer is summarized in a table for different types of control instruments. The relative dose contribution from the primary and the scattered gamma radiations of uranium and thorium rocks are characterized in two sets of dose-

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L 5072-66

ACC NR: AP5022634

energy curves. The article presents only a general review of safe-guard conditions in the uranium mining industry without making any conclusions.

ASSOCIATION: None

SUBMITTED: 20Nov64

NO REF SOV: 019

ENCL: 00

SUB CODE: NP, GO

OTHER: 003

Card

4/4 *red*

Shalalev, I.N. [Shalalev, I.N.], inzh.-mekhanik

Support of Kharkov efficiency promoters. Meth. sil:
hosp. 12 no. 10.39-39 0 '31. (MIRA 14:11)

(Tractors Maintenance and repairs)

SHALAYEV, I.N., inzh.

Reconditioning parts by hardfacing them with the "WISKOR-9"
charge. Stroi. i dor. mash. 7 no.5;38-39 My '62. (MIRA 15:5)
(Hard facing)

PERESYPKIN, V., doktor biolog. nauk (Kiyev); KIRIK, N., aspirant (Kiyev);
SHALAYEV, M. (Kiyev); KHMEL', N., aspirantka

Protection of peas against ascochyta blight. Zashch. rast. ot vred.
i bol. 10 no.3:20-21 '65. (MIRA 19:1)

1. Ukrainskaya sel'skokhozyaystvennaya akademiya (for Kirik).
2. Khar'kovskiy sel'skokhozyaystvennyy institut (for Khmel').

SHALAEV, M. I.

Oscillography as an objective method of determination of local
vascular disorders following cooling off. Sovet. vrach. sborn.
No. 18, 1949. P. 17-8

1. Hospital for Water-Transport Workers imeni Semashko at
Arkhangel'sk. U.A

CMML 19, 5, Nov., 1950

SHALAEV, M. I.

31905. SHALAEV, M. I. K voprosu o tak nazyvaemoi "vlazhnoi konechnosti" i nekotorykh prichinakh nervnykh distrofi. (Khirurgiia, Mar. 1951, no. 3, p. 41-46, table) 2 refs. *Title tr.:* On the problem of the so-called "humid extremity" [trench foot] and some causes of nervous dystrophy.

Contains information on the first medical description of trench foot, and more recent accounts of it and of "cold immersion" frostbite of shipwrecks; pathology of cold injury; nervous involvement due to it; trench foot among the Dvina fishermen (with case histories); nerve injuries among the fishermen (2 cases).

Copy seen: DSG.

of SURGICAL Div. (Head - M. I. Shalaev),
ORDZHONIKIDZEVSKIY RAYON HOSPITAL,
MOLOTOV.

REF - MEDICAL

SHALAYEV, M. I.

SHALAYEV, M.I.

Penetrating stab wound of the heart sutured with the aid of
pericardial flap. Khirurgiia no.5:69 My '54. (MLRA 7:7)

1. Iz kliniki fakul'tetskoy khirurgii Molotovskogo meditsinskogo
instituta.

(HEART, wounds and injuries,
*surg., pericardial grafts)

(WOUNDS AND INJURIES,

*heart, surg., pericardial grafts)

SHALAYEV,

M. I.

USSR/General Problems of Pathology. Comparative Oncology. Tumors
in Humans

U-7

Abs Jour : Ref Zhur - Biol., No 13, 1958, No 61186

Author : Shalayev M.I.

Inst : Molotovsk Medical Institute

Title : The Problem of an Isolated Lymphogranulomatosis of the Stomach

Orig Pub : Tr. Molotovsk. Med. in-ta, 1957, vyp. 27, 130-131

Abstract : Describes a case of an isolated lymphogranulomatosis of the stomach in a patient 60 years old. Complaints: constant gnawing pains in the epigastric region, these pains increasing after an intake of food, regurgitation, heartburn, feeling a lump in the stomach, especially after the intake of food, considerable loss of weight during the past 3 months, vomiting, weakness, vertigo. Numerous examinations of the gastric juice, blood and urine did not reveal any pathology. Roentgen examination showed defective filling of the pylorus. A laparotomy revealed: a tumor in the pylorus area, and the presence of lymphatic nodes in the small packing gland. A gastric reaction

Card : 1/2

43

SHALAYEV, M.I., k_gnd.med.nauk (Molotov)

New symptom for diagnosing the location of suppurative processes in the lungs. Klin.med. 35 [i.e.34] no.1 Supplement:48 Ja '57.

(MIRA 11:2)

1. Iz fakul'tetskoy khirurgicheskoy kliniki (zav. - prof. A.L.Fenelonov) Molotovskogo meditsinskogo instituta.
(LUNGS--ABSCESS)

SHALAYEV, M.I., kand.med.nauk

Prepatellar bursitis in coal miners of the Kizelovsk Basin.
Sov.med. 22 no.8:140-141 Ag '58 (MIRA 11:10)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. A.L. Fenelonov)
Permskogo meditsinskogo instituta i bol'nits Kizela i Kospasha
(glavnyye vrachi O.S. Stryapunina i V.I. Fortunatova).
(BURSITIS, statist.
prepatellar, in coal miners (Rus))
(OCCUPATIONAL DISEASES,
bursitis, prepatellar, in coal miners (Rus))

SHALAYEV, M.I., kand.med.nauk

Erysipeloid and its control. Sov.med. 24 no.9:126-128 S '60.

(MIRA 13:11)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. A.L.
Fenelonov) Permskogo meditsinskogo instituta.
(ERYSIPELOID)

SHALAYEV, M. I. (Perm' Kamges, Levyy bereg. Pesochaya ul., d. 12)

Metaplastic ossification of the main bronchus serving as an indication for pneumonectomy. Gruh. khir. no.4:107-109 '61.
(MIRA 14:12)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. A. L. Fenelonov)
Permskogo meditsinskogo instituta.

(BRONCHI---DISEASES) (OSSIFICATION)
(LUNGS---SURGERY)

SHALAYEV, M.I., kand.med.nauk (Perm', poselok P.D.K., ul. Pesochnaya, d.12);
KROTKIN, A.A.; TOMILIN, A.K.; ONOSOV, A.G.

Closed lesions of the liver according to six-year data of some
hospitals in the Kizel coal basin. Klin.khir. no.9:72 S '62.
(MIRA 16:5)

(KIZEL BASIN---LIVER---WOUNDS AND INJURIES)

SHALAYEV, M.I., kand. med. nauk

Effect of suppurative processes in the lungs on the function
of other organs. Sov. med. 26 no.11:12-17 N'62 (MIRA 17:3)

1. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. A.L.
Fenelonov) Permskogo meditsinskogo instituta.

BAYANDIN, P.A. (Murmansk); SHVETSOV, I.M.; TIMOFEYEVA, N.V.; KOVAL', V.P.; KOZLOVA, E.Z.; TRET'YAKOV, N.I. (Kaliningrad); MAMEDOV, E.Sh. (Poselok Martuni, AzerSSR); BOROVYY, Ye.M.; DULAYEV, S.G. (Grodno); GERASIMOV, B.A. (Lugansk); MEL'NIK, L.A. (Chernovtsy); MIGAL', L.A.; GUBANOV, A.G.; GOROVENKO, G.G. (Kiyev); SHAROV, B.K. (Chelyabinsk); SHUVALOVA, Z.A. (Sverdlovsk) NEYMARK, I.I.; ARYAYEV, L.N. (Odessa); KABANOV, A.N.; KONOVALOV, Yu.S.; ZAK, V.I. (Orenburg); MIKHAYLOV, M.M.; SEZ'KO, A.D. (Voronezh); SHALAYEV, M.I.; DONIN, V.I. (Saratov).

Abstracts. Grudn. khir. 5 no.3:110-126 My-Je'63 (MIRA 17:1)

1. Iz kafedry normal'noy anatomii Ryazanskogo meditsinskogo instituta imeni akademika I.P.Pavlova (for Shevtsov). 2. Iz Sochin-skogo nauchno-issledovatel'skogo instituta kurortologii i fizioterapii Ministerstva zdravookhraneniya RSFSR (for Timofeyeva). 3. Iz khirurgicheskogo otdeleniya Ternopol'skoy klinicheskoy gorodskoy bol'nitsy (for Koval'). 4. Iz kafedry topograficheskoy anatomii i operativnoy khirurgii (zav. - prof. A.P. Sokolov). Permskogo meditsinskogo instituta (for Kozlova). 5. Iz khirurgicheskogo otdeleniya (zav. - Ye. M. Borovyy) Rovenskoy oblastnoy bol'nitsy (glavnyy vrach - UkrSSR V.M. Vel'skiy) (for Borovyy).

(Continued on next card)

BAYANDIN, P.A.— (continued) Card 2.

6. Iz fakul'tetskoy khirurgicheskoy kliniki (dir. - prof. I.M. Popov'yan) i gospital noy terapevticheskoy kliniki (dir. - prof. L.S.Shvarts) lechebnogo fakul'teta Saratovskogo meditsinskogo instituta (for Migal'). 7. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. I.I.Neymark) Altayskogo meditsinskogo instituta (for Neymark). 8. Iz Novosibirskogo gorodskogo protivotuberkuleznogo dispansera (for Kabanov). 9. Iz kafedry fakul'tetskoy khirurgii (zav. - prof. I.A.Ivanov) Permskogo meditsinskogo instituta (for Shalayev).

DZYUBA, M.Ye.,redaktor; SHALAYEV, M.S.,redaktor

[Improved varieties of field crops for the Ukraine] Krashchi
serty polovykh kultur Ukrainskoi RSR. 2. dop. i perer. vyd.
Kyiv, Derzh. vyd-vo sil's'kohospodarskoi lit-ry URSR, 1956.
(MLRA 10:4)

(Ukraine--Field crops)

SHALAYEV, N. B.

AID P - 3349

Subject : USSR/Electricity
Card 1/1 Pub. 29 - 7/27
Authors : Anikin, N. M., Foreman and Shalayev, N. B., Eng.
Title : Experience with operating milling ventilators
Periodical : Energetik, 9, 16-17, S 1955
Abstract : The authors describe coal milling ventilators servicing two water heating boilers fired with pulverized coal. The ventilators were produced by the plant's own workshop. Two detailed drawings.
Institution : None
Submitted : No date

BAZHENOV, A.V., inzhener; SHALAYEV, N.B., inzhener.

Using shaft-type impact mills with metal collectors. Energetik 4
no.8:11-12 Ag '56. (Pulverizers) . (MLRA 9:10)

SHALAYEV, N.B., inzhener; ANIKIN, N.M., st.master.

Operational experience with fan pulverizers. Trudy Ural.politekh.
inst.no.61:180-190 '56. (MLRA 10:2)
(Pulverizers)

BASKAKOV, A.P., kand.tekhn.nauk; VOLKOV, Ye.Z., inzh.; SHALAYEV, N.B., inzh.

In reference to the article "Thermal calculation of brick linings
for modern high-power steam boilers." Elek.sta. 29 no.8:92
Ag '58. (MIRA 11:11)

(Boilers)

11(7)

SOV/143-59-2-10/19

AUTHORS: Volkov, Ye.V., Engineer; Rysakov, N.F., Docent; and Shalayev, N.B., Engineer

TITLE: The Application of Cyclone Stokers With Liquid Slag Removal for Firing Cut Peat (O primeneniye tsiklonnykh topok s zhidkim shlakoudaleniye dlya szhiganiya frezernogo torfa)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Energetika, 1959, Nr 2, pp 79-86 (USSR)

ABSTRACT: Since about 50% of the coal required by the economic districts of the Ural, including the Sverdlovsk, Perm' and Chelyabinsk Oblast', are mined in Karaganda, Kuznetsk, Ekibastuz, Cheremkhovo and Khakasiya, the authors recommend exploiting the local peat deposits as a boiler fuel. In the past, many methods for using peat as a boiler fuel have been tried, but these experiments failed, since an economic and stable firing of peat could not be achieved. Only the pneumatic stokers of TsKTI, which were based on the whirl principle of A.A. Shershnev, had some

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success and together with the shaft-mill method, they found the most wide-spread application. The cyclone stokers, suggested by Professor G.F. Knorre, are the latest development in this field. The shaft-mill method has a heat liberation value of $150 \cdot 10^3$ kcal/ m^3 h, while that of the TsKTI stoker is $120 \cdot 10^3$ kcal/ m^3 h, which is relatively low and therefore large stoker volumes are required. In addition, soot traps must be installed, since about 85% of the peat ash are carried out of the smokestacks with the first method and almost 100% with the TsKTI stoker. The large stoker volumes and the soot traps of the presently used methods are not suitable for a large-scale conversion of boiler stokers to use peat as fuel. Therefore, only 2.09 million tons of peat were mined in the Sverdlovsk Oblast' in 1957, while the annual output could be around 40-50 million tons annually, since the peat deposits in this area alone are estimated at 4.5 billion tons. The Ural

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quired. The authors had the opinion that such a temperature would not provide a stable and continuous removal of the liquid slag. When burning peat in a cyclone stoker with liquid slag removal, the main problem is to provide a temperature in the combustion chamber which exceeds the melting temperature of the slag to a considerable degree. The authors performed the same calculations for peat with a moisture content of 30-35% which showed that a temperature of 1706-1733°C could be achieved when blowing in air at 350-400°C. Figure 1 shows the graphical presentation of the calculation results. A footnote says that the slag viscosities of various fuels are under investigation at UPI - Ural'skiy politekhnicheskii institut imeni S.M. Kirova (Ural Polytechnical Institute imeni S.M. Kirov). Based on the theoretical calculations an experimental cyclone stoker was built at UPI, as shown by figure 2. A fan was used, powered by a 50 kw asynchronous motor,

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which produced a pressure of 2,000 mm water column at 3,000 m³/h air consumption. The air heater provided temperatures of up to 500°C. The combustion chamber of the cyclone stoker is shown by figure 3. The peat used for the experiments was preliminarily dried and had a moisture content of 15-20%, its ash content was 11% with 62-69% volatile matter. Its heat value was 3900-4100 kcal/kg. The peat was fed into the cyclone stoker at a rate of 450 kg/h at an air temperature of 350°C, whereby heat liberation values $Q/V_{ts} = 9 \cdot 10^6$ kcal/m³h and $Q/F_{ts} = 7.5 \cdot 10^6$ kcal/m³h were obtained. The gas temperatures in the cyclone stoker were 1500-1600°C while the surface temperature of the liquid slag flowing out of the tap hole was 1380-1440°C. Pyrometer errors must be taken into consideration, thus the actual temperatures were somewhat higher. Based on the positive results of the experiment, the Kafedra PTE - Kafedra promptep-

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loenergetiki (Chair of Industrial Thermal Power Engineering) of UPI suggested at a conference of the technical council of TETs UZTM and the Toplivnyy komitet NTOEP (Fuel Committee NTOEP) on June 28, 1957, to install a cyclone stoker for burning peat with a reduced moisture content at one of the boilers of TETs UZTM. The conference recommended the suggested reconstruction to the administration of the TETs UZTM and asked the Kafedra PTE of UPI to work out a project for such a reconstruction. There are 2 diagrams, 1 graph and 9 Soviet references.

ASSOCIATION: Ural'skiy politekhnicheskii institut imeni S.M. Kirova (Ural Polytechnical Institute imeni S.M. Kirov)

PRESENTED: Kafedra promteploenergetiki (Chair of Industrial Heat Engineering)

SUBMITTED: November 10, 1958

Card 6/6

VOLOKOV, Ye.V., inzh.; REYK, L.M., inzh.; RYKHOV, M.P., dots.;
SKOROMKHOD, V.P., inzh.; SHAPIRO, S.Ye., inzh.; SHIL'KIN,
H.B., inzh.

Conversion of boiler furnaces from block peat to milled peat
by installing cyclone furnaces. Izv. vys. ucheb. zav.; energ.
4 no. 1:116-122 Ja '61. (MIRA 14:2)

1. Ural'skiy politekhnicheskii institut imeni S.M. Mirova,
Uralskoye mashzavod i Uralenergocheret. Predstavlena kafedra
promteploenergetiki Ural'skogo politekhnicheskogo instituta.
(Furnaces)

VOYTSITSKIY, S.F.; SHALAYEV, N.B.

Experience in operating a water heating boiler with a heat
generating capacity of 13 G.cal./hr. on solid fuel. Prom.energ.
16 no.10:18-21 0 '61. (MIRA 14:10)
(Water heaters)

ZAKROCHENSKIY, S.V., inzh.; SHALAYEV, N.P., inzh.

Secure safe operation of waterheaters. Bezop.truda v prom. 6
no.4:17-19 Ap '62. (MIRA 15:5)

1. Upravleniye Sverdlovskogo okruga Gosudarstvennogo komiteta pri
Sovete Ministrov RSFSR po nadzoru za bezopasnym vedeniyem rabot
v promyshlennosti i gornomu nadzoru (for Zakrochinskiy). 2.
Ural'skiy politekhnicheskii institut (for Shalayev).
(Waterheaters--Safety measures)

BASKAKOV, A.P.; GUREVICH, M.I.; RESHETIN, N.I.; RYSAKOV, N.F.;
SHALAYEV, N.B.; GIRSHFEL'D, V.Ya., red.; FRIDKIN, L.M.,
tekhn. red.

[General heat engineering] Obshchaia teplotekhnika. [By]
A.P.Baskakov i dr. Moskva, Gosenergoizdat, 1963. 391 p.
(MIRA 16:6)

(Heat engineering)

VASHLYAYEV, N.M. SHALAYEV, P.B. SHALAYEV, N.B.

Increase in the operational reliability of exhaust fans. Prom.
energ. 20 no. 1126-29 Ja '65. (MIRA 1814)